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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,994	11/12/2003	John C. Tsai	60617.301501	2993

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INTELLECTUAL PROPERTY LAW OFFICE  
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CAMPBELL, CA 95008

EXAMINER

NGUYEN, TU T

ART UNIT PAPER NUMBER

2877

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/605,994

Applicant(s)

TSAI ET AL.

Examiner

Tu T. Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities:

Specification, paragraph [0013], line 1, "FIG. 4a-b" should be changed to "FIG. 4a-c".

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellerbrock et al (6,204,920).

With respect to claims 1,20, Ellerbrock discloses a system for analyzing strain in a structure. The system comprises: a laser module 204 (fig 2) including a laser light source 204 (fig 2) to produce a light beam 208 (fig 2); a plurality of sensor modules 202 (fig 2) each including a fiber Bragg grating (abstract); a first set of optical fiber 216 (fig 2) to communicate portions of said light beam 208 (fig 2) from said laser module 204 (fig 2) to said plurality of sensor modules 202 (fig 2); a second set of optical fiber 281 (fig 2) to communicate portions of said light beam from said sensor modules to respective detectors 220 (fig 2); and a monitoring station 222, 224 (fig 2) to receive said detector signals and to perform analysis thereon.

Ellerbrock does not disclose a plurality of filter modules paired with said sensor modules, wherein each said filter module includes a filter device and a photodetector to produce a detector signal. Ellerbrock discloses (prior art section, fig 1) a system for analyzing strain in a structure. The system comprises: a plurality of filter modules TF1, TF2 (fig 1) paired with sensor modules SA1, SA2 (fig 1), wherein each said filter module includes a filter device and a photodetector PD1 (fig 1) to produce a detector signal. It would have been obvious to modify Ellerbrock with the filter module as taught by Ellerbrock's prior art to sense different characteristics of the structure at a plurality of locations.

With respect to claims 2-4,21-23, Ellerbrock does not disclose the frequency locking sub-system. However, it would have been obvious to modify Ellerbrock with the claimed frequency locking sub-system to control the output of the light source for facilitating the measurement.

With respect to claims 5,24, Ellerbrock discloses a system including temperature sensors (column 4, lines 53-67). However, Ellerbrock does not disclose normalizing the detector signals based on the temperature signals. It would have been obvious to modify Ellerbrock with the claimed normalizing step to calibrate the sensors so that the system could be used in different environments.

With respect to claims 6,25, Ellerbrock discloses that the system could be used to sense different parameters (column 4, lines 60-65). It would have been obvious to modify Ellerbrock with the claimed intensity sensor to normalize the detector signals in order to use the system in different environments.

With respect to claims 7,9,10,26-27, the claimed erbium doped fiber amplifiers, Fabry-Perot interference filters, fiber interferometer would have been known in the art. It would have been obvious to modify Ellerbrock with the known elements above to facilitate the measurement.

With respect to claim 8, it would have been obvious to modify Ellerbrock sensor to monitor different structures for different testing purposes.

With respect to claims 11-12, since the general conditions of the invention were disclosed by the prior arts, modifying the sensor and filter modules to form a single or multi-ports configuration for different using purposes involves only routine skill in the art.

With respect to claims 13,15-16,29-30, Ellerbrock discloses that the sensors could be connected in series or in parallel (column 4, lines 50-52).

With respect to claims 14,28, Ellerbrock discloses using a broadband light source and each sensor operating in different bandwidth (column 5, lines 1-15 and lines 30-40).

With respect to claims 17-19,31-34, it would have been obvious to modify Ellerbrock with the claimed performing an analysis with respect to time or comparing the detector signals against a database or setting up warning based on analysis of detector signals for different testing purposes or for using the system in different environments. The modification involves only routine skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley Jr. can be reached on (571) 272-2800 Ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu T. Nguyen  
Primary Examiner  
Art Unit 2877

02/19/2005